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21. The method of Claim 1, wherein said subnet is a single hop ~~wireless network.~~

REMARKS

Claims 1-3 and 5-21 are pending in the application.

Claims 1-3 and 5-21 are rejected.

Claim 1, 5-7, 10, 12-13 and 20 are amended.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Prior Art Rejections

All claims have been rejected on the basis of cited prior art which includes U.S. Patent No. 6,304,753 (Hartmaier) as well as other references.

Applicants submit that the present invention as set forth in independent Claims 1, 13 and 20 is distinguishable over cited references, since all of the limitations of the claims are not found in the cited references. Additionally, applicants submit that one skilled in the art would not look to combine the cited references as suggested.

Applicants have amended the independent claims to clarify that the in the context of the present invention a first address for delivery of a plurality of packets is assigned to a wireless device in a specific subnet. The first address is utilized when the wireless device is attached to the packet-based network through a base station included within a first domain including a set of identified nodes. A home agent utilizes a second address for the wireless device when the wireless device is attached to the packet-based network through a base station

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excluded from said first domain. In accordance with the present invention, the first address for the wireless device continues to be utilized when the mobile device is handed off to a base station within the same subnet. Applicants respectfully submit that the claims of the present invention are distinguishable over the prior art, since the above limitations are not disclosed or suggested by the prior art

Moreover, with respect to the Hartmaier reference, Hartmaier discloses an architecture where the MSC and the HLR are responsible for processing registration message from the mobile device and the MSC is capable of routing packets to the mobile using the data network. In the present invention, the data network, e.g., the routers, is completely responsible for processing the registration and routing the packets to the mobile host. Thus, the Hartmaier reference is very different because the MSC is a centralized entity while the data network is a distributed collection of routers. Thus, while it is easy to coordinate changes at one centralized entity, the MSC, it is difficult to coordinate routing changes due to mobility inside the data network itself as in the present invention. The benefit of the invention, is of course, the lack of need for an expensive MSC for coordinating routing. Accordingly, the claims have been amended to clarify that the routing takes place in a distributed network of routers, as opposed to a centralized mechanism.

For the reasons set forth above, it can be seen that the present invention is distinguishable over the Hartmaier reference, since Hartmaier teaches centralized routing as opposed to the distributed routing of the present invention. Thus, a person skilled in the art would not look to combine the Hartmaier reference with other references to reach the present invention, since Hartmaier actually teaches away from the concepts of the claimed invention. The other cited references do not teach or suggest the deficiencies of the Hartmaier

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reference. Thus, the rejections having Hartmaier alone or in combination with other references are believed to have been overcome by the above arguments and the amendments to the claims.

In addition, the Pelach reference is believed to be inapplicable since Pelach discloses an architecture where not only the hosts, but also the connecting base stations, are mobile. This results in inefficiencies that are not found in the present invention, thus a person skilled the art would not look to Pelach in order to reach the present invention. For example, in Pelach et al, when a packet arrives at a Wireless Switch Center(WSC), the WSC searches if the destination address is in its routing table. If the address is not present, the packet is forwarded to the next WSC (See figure 5., block 505) - thus, as the packet is being forwarded, it might have to be searched in the routing table of several WSC's before the exact WSC is located. This approach introduces large routing paths and delays but is necessary in their system since the base station serving the mobile host could itself move anytime to a different WSC and thus, all the WSC's have to be searched.

In the present invention architecture (where the base stations are fixed), the equivalent of the WSC is the domain root router (DRR) and that is identified easily by the subnet portion of the destination address. Thus, when packets arrive at any DRR, the DRR knows that mobile host is present in its domain and forwards it to the correct base station, resulting in shorter path and lower delay.

The dependent claims in the application are believed to be allowable, since they depend from and include all the limitations of a dependent claim which has been shown to be allowable.

Based on the above remarks and the amendments to the claims, applicants submit that the claims have been shown to be allowable in view of the prior art and that the basis for any rejections has been overcome.

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Conclusion

Having fully addressed the Examiner's rejections it is believed that, in view of the preceding remarks, this application stands in condition for allowance. Accordingly, reconsideration and allowance are respectfully solicited. If, however, the Examiner is of the opinion that such action cannot be taken, it is respectfully requested that the Examiner contact the applicants' attorney at (732) 949-9742, so that a mutually convenient date and time for a telephonic interview may be scheduled.

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If any additional fees are due with respect to this amendment, please charge them to Deposit Account No. 12-2325

Respectfully submitted,



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Lucent Technologies Inc.
Dated: February 19, 2003

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I hereby certify that this correspondence is being deposited in the United States Postal Service as first class mail in an envelope with sufficient postage addressed to: The Assistant Commissioner of Patents and Trademarks, Box Non-Fee Amendment, Washington, D.C. 20231 on February 19, 2003.



Matthew Hodulik

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1 1. (Amended) A method of establishing a routing path in a
2 distributed packet-based network for packet delivery to a destination node within
3 the same packet-based subnet, said destination node having a destination node
4 address, wherein a first address for delivery of a plurality of packets is assigned
5 to a wireless device in said subnet, said first address utilized when said wireless
6 device is attached to said packet-based network through a base station included
7 within a first domain including a set of identified nodes, and wherein a home
8 agent utilizes a second address for said wireless device when said wireless
9 device is attached to the packet-based network through a base station excluded
10 from said first domain, said method comprising the steps of:

11 launching a path setup message from said destination node;
12 receiving said path setup message over a first interface at a first router;
13 and

14 creating a first routing table entry for a first routing table, said first routing
15 table entry corresponding said destination node address to said first interface,

16 wherein a packet, subsequently received at said first router and having
17 said destination node address as a packet header destination address, is
18 forwarded from said first router over said first interface after said first router
19 associates said destination node address with said first routing table entry, and

20 forwarding a handoff update path setup message from a second wireless
21 base station to a first wireless base station including said first router if said
22 wireless device is handed off from said first wireless base station to said second
23 wireless base station, said handoff update path setup message used to alter
24 routing table entries for selected routers of said subnet, wherein said first

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25 address for said wireless device continues to be utilized if said second base
26 station is within the same subnet.
27 .

1 2. The method in accordance with claim 1 wherein said destination
2 node is a wireless device.

1 3. The method in accordance with claim 2 wherein said first router is
2 incorporated within a first wireless base station.

1 4. Cancelled.

1 5. (Amended) The method in accordance with claim [4] 1 wherein
2 said plurality of subnet routers include at least said first wireless base station and
3 said second wireless base station.

1 6. (Amended) The method in accordance with claim [4] 1 wherein
2 said handoff update path setup message is initiated from said wireless device.

1 7. (Twice Amended) [A method of establishing a routing path for
2 packet delivery to a destination node within a packet-based subnet, said
3 destination node having a destination node address, said method comprising the
4 steps of:

5 launching a path setup message from said destination node;

6 receiving said path setup message over a first interface at a first router;

7 and

8 creating a first routing table entry for a first routing table, said first routing
9 table entry corresponding said destination node address to said first interface,

10 wherein a packet, subsequently received at said first router and having
11 said destination node address as a packet header destination address, is
12 forwarded from said first router over said first interface after said first router
13 associates said destination node address with said first routing table entry,

14 said destination node being a wireless device and said first router being
15 incorporated within a first wireless base station,]

1 The method in accordance with claim 3 wherein said wireless device is able to
2 simultaneously tune to, and receive packets from, greater than one base station.

1 8. The method in accordance with claim 7 wherein said wireless
2 device is a CDMA device.

1 9. The method in accordance with claim 1 wherein said packet-based
2 subnet is an Internet Protocol subnet.

1 10. (Twice Amended) [A method of establishing a routing path for
2 packet delivery to a destination node within a packet-based subnet, said
3 destination node having a destination node address, said method comprising the
4 steps of:

5 launching a path setup message from said destination node;

6 receiving said path setup message over a first interface at a first router;

7 and

8 creating a first routing table entry for a first routing table, said first routing
9 table entry corresponding said destination node address to said first interface,

10 wherein a packet, subsequently received at said first router and having
11 said destination node address as a packet header destination address, is
12 forwarded from said first router over said first interface after said first router
13 associates said destination node address with said first routing table entry,]

14 The method in accordance with claim 1 further comprising the steps of:

15 forwarding said path setup message to a next router, said next router
16 receiving said path setup message over a first interface at said next router;

17 creating a next routing table entry for a next routing table, said next
18 routing table entry corresponding said destination node address to said first
19 interface at said next router; and

20 sending a path setup message acknowledgment to said destination node
21 address if said next router is a subnet root router.

1 11. The method in accordance with claim 10 further comprising the
2 step of:

3 repeating said steps of forwarding and creating a next routing table entry if
4 said next router is not said subnet root router.

1 12. (Twice Amended) [A method of establishing a routing path for
2 packet delivery to a destination node within a packet-based subnet, said
3 destination node having a destination node address, said method comprising the
4 steps of:

5 launching a path setup message from said destination node;
6 receiving said path setup message over a first interface at a first router;
7 and

8 creating a first routing table entry for a first routing table, said first routing
9 table entry corresponding said destination node address to said first interface,

10 wherein a packet, subsequently received at said first router and having
11 said destination node address as a packet header destination address, is
12 forwarded from said first router over said first interface after said first router
13 associates said destination node address with said first routing table entry,]

14 The method in accordance with claim 1 further comprising the step of:

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maintaining said first routing table entry as a soft state in said first router, said first routing table entry overwritten with a default entry if a refresh path setup message is not received at said router within a specified period of time.

13. (Amended) A packet router having a routing table adapted to maintain a plurality of routing table entries for a distributed packet-based network for packet delivery to a destination node within the same packet-based subnet said destination node having a destination node address, wherein a first address for delivery of a plurality of packets is assigned to a wireless device in said subnet, said first address utilized when said wireless device is attached to said packet-based network through a base station included within a first domain including a set of identified nodes, and wherein a home agent utilizes a second address for said wireless device when said wireless device is attached to the packet-based network through a base station excluded from said first domain, said packet router comprising:

means for receiving a path setup message over a first interface, said path setup message including a field defining a destination address;

means, responsive to receiving said destination address, for generating a routing table entry corresponding packets arriving at said packet router and having said destination address as a packet header destination address to said first interface;

means for receiving at least one packet having said destination address as said packet header destination address;

means for performing a lookup of said routing table entry having said destination address and as said packet header destination address from said plurality of routing table entries;

means, responsive to said lookup, for forwarding said at least one packet over said first interface

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25 wherein a handoff update path setup message from a second wireless
26 base station to said router is received if said wireless device is handed off from
27 said router to said second wireless base station, said handoff update path setup
28 message used to alter routing table entries for selected routers of said subnet,
29 wherein said first address for said wireless device continues to be utilized if said
30 second base station is within the same subnet.
31

1 14. The packet router in accordance with claim 13 wherein said
2 destination address corresponds to a wireless device.

1 15. The packet router in accordance with claim 13 wherein said router
2 is incorporated in a wireless base station.

1 16. The packet router in accordance with claim 13 wherein said packet
2 router is an Internet Protocol router.

1 17. The packet router in accordance with claim 13 wherein said path
2 setup message is a power up path setup message.

1 18. The packet router in accordance with claim 13 wherein said path
2 setup message is a handoff path setup message.

1 19. The packet router in accordance with claim 13 wherein said path
2 setup message is a refresh path setup message.

1 20. (Amended) A method of updating host-based routing table entries
2 for a plurality of routers within a subnet when a mobile device is handed off from

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3 a first wireless base station to a second wireless base station, said subnet
4 providing wireless access for said mobile device to a packet-based network,
5 wherein a first address for delivery of a plurality of packets is assigned to a
6 wireless device in said subnet, said first address utilized when said wireless
7 device is attached to said packet-based network through a base station included
8 within a first domain including a set of identified nodes, and wherein a home
9 agent utilizes a second address for said wireless device when said wireless
10 device is attached to the packet-based network through a base station excluded
11 from said first domain, said method comprising the steps of:

12 creating a handoff path setup message at said mobile device;

13 routing said handoff path setup message to said first wireless base
14 station;

15 relating, as a routing table entry, an address for said mobile device with
16 an interface over which said handoff path setup message is received at said first
17 wireless base station and each intermediate router and base station through
18 which said handoff path setup message is routed; and

19 utilizing said routing table entry to forward a packet having said
20 address for said mobile device as a packet header destination address over said
21 interface over which said handoff path setup message is received, wherein said
22 first address for said wireless device continues to be utilized if said second base
23 station is within the same subnet.

24 .
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21. The method of Claim 1, wherein said subnet is a single hop
wireless network.